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Docket No.: 02-41 US

IN THE CLAIMS:

1. (currently amended) A method of manufacturing a rotor for a high vacuum turbomolecular pump, comprising the steps of:
providing a workpiece being made of a material suitable for producing of said rotor;
forging said workpiece to obtain a generally cylindrical body(1,11) through an axial compression (P₁), said cylindrical body being a semi-finished part having a homogeneous homogeneous mechanical properties; and
~~obtaining one or more sets of radial peripheral vanes thereon~~
~~mechanically working said generally cylindrical body(1,11) for forming one or more set of radial peripheral vanes therein;~~
~~wherein during the axial compression (P₁) of said workpiece a radial expansion thereof is prevented.~~
2. (canceled)
3. (original) The method of claim 1, wherein said rotor is a bell-shaped rotor.
4. (currently amended) The method of claim 3, further comprising the steps of:
forging said generally cylindrical body being a cylindrical billet (1) through an axial compression (P₁), and
subsequently forging forming a cavity within said cylindrical body being a cylindrical billet (1) by means of a punch (12) that is forced into the billet, while preventing at the same time radial expansions of the billet through confinement in a mold.
5. (currently amended) The method of claim 4, wherein the steps step of forming a said cavity comprising comprises extending said cavity (13) over a part of said cylindrical billet and refining by subsequent mechanical working.
6. (currently amended) The method of claim 5, further comprising the steps step of forming of a central bore on a bottom of said cavity and subsequently providing a thermal

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treatment for improving mechanical properties of said bell-shaped rotor.

7. (original) The method as claimed in any preceding claim, further comprising a step of processing said at least one set of radial peripheral vanes by one or more techniques selected from the group consisting of milling, turning and electric discharge machining.

8-9. (canceled)